

Socio-Demographic Predictors of Neighbourhood Parks' Utilisation in Nairobi City: *A Mixed-Methods Study*

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Received on 2nd February, 2026; Received in revised form 5th June, 2026; Accepted on 25th June, 2026.

Abstract

Neighbourhood parks offer ecological, social, economic, psychological, and recreational benefits to urban residents. Their utilisation is influenced by users' socio-demographic characteristics, including age, gender, education level, marital status, and occupation. Park utilisation was elucidated through user activities. The study examined eight purposively selected neighbourhood parks and conveniently sampled 416 male and female park users across 11 age groups. Findings revealed a predominance of male park users, primarily young, unmarried, and self-employed individuals with secondary education. Significant associations were found between age, gender, education level, occupation, and park utilisation, while marital status showed no significant association. Five main park utilisation activities emerged: commercial activities, passive recreation, organised sports, child play, and urban agriculture. The study concluded that user socio-demographic characteristics significantly influenced park utilisation. Recommendations include integrating recreation with commerce, adding agri-amenities, designing multi-use game areas, and ensuring consistent park maintenance and surveillance.

Keywords: Chi-square analysis, mixed methods, Nairobi, neighbourhood parks, park utilisation, socio-demographic characteristics, urban green spaces, urban planning

INTRODUCTION

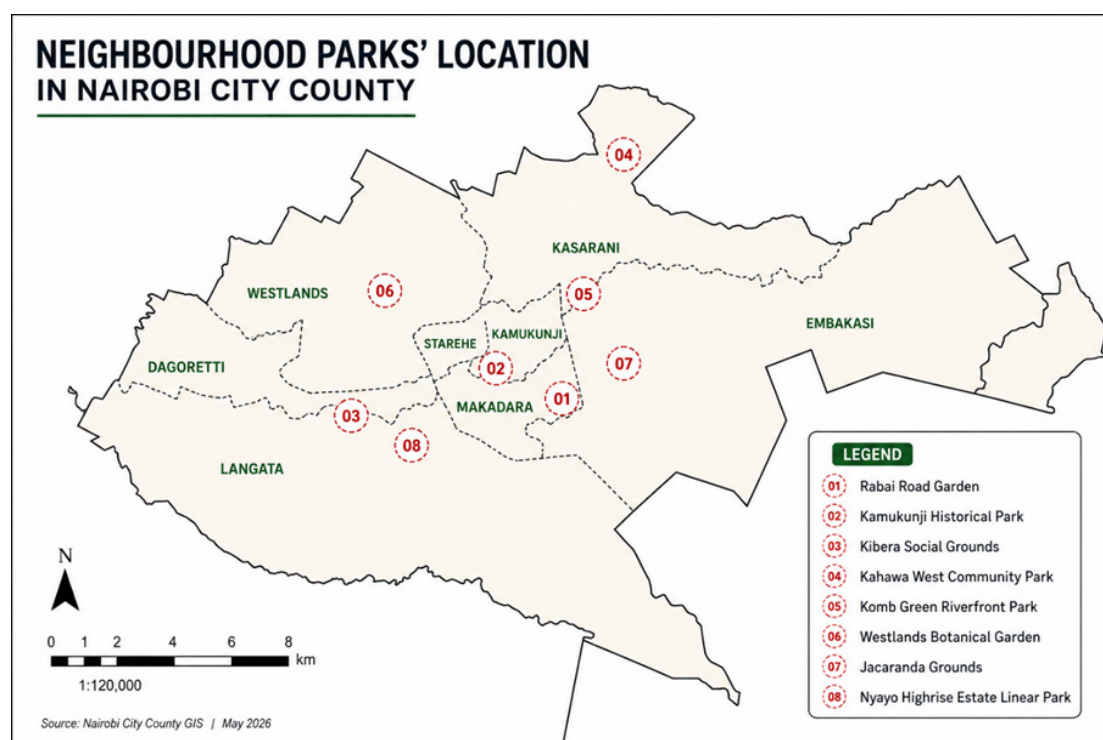
Neighbourhood parks are public residential open spaces that offer amenities such as playgrounds, sports facilities, walking paths, natural vegetation, and seating. These parks enhance mental and physical health (Reece et al., 2024), social well-being (Gong et al., 2023), and provide recreational opportunities (Jogdande & Bandyopadhyay, 2022). They further boost ecosystem services (Cui et al., 2024) and economic activity by increasing foot traffic at commercial spaces and enhancing property values (Kweon & Russel, 2025). Educational benefits are additionally derived from outdoor classrooms and familiarity with biodiversity. These parks support sustainability goals by making human settlements safe, inclusive, and resilient. To satisfy diverse user needs, park benefits are highly dependent on developing well-organised, inclusive park designs, maintenance of park amenities, and community involvement in park management.

While user socio-demographic characteristics are known predictors of park utilisation in China (Ma et al., 2022), Ethiopia (Azagew & Worku, 2020), and Kisumu, Kenya (Kiplagat et al., 2022), there is limited research on how these factors influence neighbourhood park utilisation in Nairobi City. Further, no study has assessed how socio-demographic characteristics, as incorporated in the Social Ecological Model, mediate physical activity within Nairobi's neighbourhood parks. This study represents the first empirical examination of socio-demographic predictors of neighbourhood park utilisation in Nairobi City. This paper, therefore, studies neighbourhood parks in Nairobi City (**Figure 1**). It seeks to assess which user socio-demographic characteristics influence park utilisation. This will establish design criteria for the spatial design of such parks, improving user experience and ensuring efficient park usage.

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**FIGURE 1**

Distribution of neighbourhood parks in Nairobi City

Source: Map generated using data from UN-Habitat, 2020

THEORY

Park Utilisation as Influenced by User Socio-Demographic Characteristics

Socio-demographic characteristics are essential indicators that describe individuals' personal, social, and economic traits, including age, education, employment status, ethnicity, gender, income, marital status, and occupation. These factors significantly influence user preferences and activities in parks (Gong et al., 2023; Ma et al., 2022). Park utilisation, which involves the typology of user activities, is assessed using spatial mapping and activity distributions. It can encompass active or passive use, social interactions, and vending. Different socio-demographic groups within a community have varying recreational and social needs, which affect how parks are used. These characteristics also dictate the demand for specific park amenities and shape users' subsequent activities. Previous studies have shown that factors such as age, gender, education, and income levels directly influence park utilisation (Azagew & Worku, 2020; Jane et al., 2025; Ma et al., 2022).

Gender

Female users accompanying children to play

spend more time in parks (Braçe et al., 2021). They avoid parks perceived as isolated, neglected, dark or with threatening individuals due to personal safety concerns (Raina & Mandal, 2025). Male park users are often associated with parks that offer moderate-to-vigorous physical activity, such as sports or competitive recreational pursuits (Cohen et al., 2021). Women participate in passive recreational activities such as walking, sitting, and observing the landscape and people in it to relieve stress or elevate mood (Azagew & Worku, 2020; Jane et al., 2025).

Age

Park revisitation is primarily driven by age in Hangzhou China (Zhan et al., 2021). Older users frequent parks more often, staying longer as they have adequate time for leisure, unlike the young who cite 'lack of time' limiting frequent park visits (Cui et al., 2024). Park accessibility is further influenced by park proximity with the elderly preferring those near to their residences and the young being willing to travel further distances to access and utilise preferred parks. Children and the elderly require social support from family and friends to frequent and use parks (Ma et al., 2022). Similarly, university students need motivation

from their peers to engage in physical activities (Johannes & Roman, 2025).

Marital Status, Education Level & Ethnicity

Marital status influences park utilisation in Kisumu and Eldoret (Kiplagat et al., 2022), with married individuals visiting less frequently. The married in China (Chen et al., 2024) frequented parks more and longer mainly engaging in family-oriented activities. However, married persons require personal spaces for individual interests, aiding in personal growth and burnout prevention. In contrast, single, divorced or widowed individuals visit parks for solo activities to combat loneliness. Despite these trends, all users seek parks for similar reasons such as stress relief, exercise or escaping urban life. This suggests that marital status does not strictly predict park utilisation.

In Ethiopia and Kenya, those highly educated (college and above) used and visited parks more (Azagew & Worku, 2020; Kiplagat et al., 2022; Odhengo et al., 2024). In contrast, there is a negative correlation between park usage and education level in Urumqi, China (Gong et al., 2023). This may be explained by longer workdays for the employed, that leave little time for leisure activities. Additionally, high earners' ability to buy other forms of recreation, eliminates their need to visit nearby parks.

Ethnicity influences park use in England (Jane et al., 2025; Palmer et al., 2025). Different ethnic groups exhibit distinct preferences for recreation and socialisation. Those who favour multi-generation gathering require spaces that promote group congregation and less individual activity spaces and vice versa. Where provided park amenities reflect the cultural background of the local community, user integration and park satisfaction is improved. This however, does not favour ethnic inclusivity as those who can't identify with the amenities feel alienated.

User Economic Status

Higher-income individuals visit and utilise parks more frequently than those with lower incomes. However, this trend varies among different countries. Low-income groups are often disadvantaged (Thompson et al., 2025), facing park accessibility challenges due to limited provision in their neighbourhoods (Jane et al., 2025). Additionally, low-income persons struggle

to allocate funds for recreational activities (Padial-Ruz et al., 2021) while wealthier individuals can visit specialised parks. Interestingly, unemployed individuals visit parks more often than employed persons in Spain due to having more free time (Braçe et al., 2021). This contradicts findings in Kisumu that suggest that employed individuals frequent parks more because of proximity to workplaces. Overall, user socioeconomic status significantly influences park visitation frequency and utilisation.

Social Ecological Model Theory

This paper draws on Bronfenbrenner's (1977) Social Ecological Model (SEM) and Stokol (1992) adaptation to include physical activity by extension (Johannes & Roman, 2025; Lee et al., 2021). SEM highlights how individual, social, environmental and policy factors interact to influence physical activity (Padial-Ruz et al., 2021). By analysing individual demographics of age, education, gender, income level and employment status, the model helps identify who uses open spaces and how these utilisations differ across various user groups (Jane et al., 2025).

To this end, this paper sought to answer the following two research questions. Are user socio-demographic characteristics associated with park utilisation undertakings in Nairobi's neighbourhood parks? Which user socio-demographic characteristics determine park utilisation patterns in Nairobi's neighbourhood parks?

Conceptual Framework

This study conceptualises park utilisation as a function of users' socio-demographic characteristics within the Social Ecological Model (SEM). The model posits that individual characteristics influence behaviour by shaping preferences, motivations, opportunities, and constraints related to the use of public open spaces. In this study, age, gender, marital status, education level, and occupation represent the independent variables that influence how users interact with neighbourhood parks.

These socio-demographic characteristics affect the type, frequency, and intensity of park utilisation activities. Different user groups demonstrate varying preferences for recreation, socialisation, physical activity, economic activities, child

play, and urban agriculture. Consequently, park utilisation is expressed through observable activity patterns occurring within neighbourhood parks. The framework assumes that variations in park utilisation are influenced by differences in socio-demographic characteristics. Guided by the Social Ecological Model, the study therefore examines the extent to which age, gender, marital status, education level, and occupation predict park utilisation patterns within Nairobi's neighbourhood parks.

Figure 2 presents the conceptual framework for the study. It illustrates how users' socio-demographic characteristics influence neighbourhood park utilisation patterns within the Social Ecological Model framework.

RESEARCH METHODS

Nairobi's open spaces are categorised by typology and scale of use in the UN-Habitat (2020) public space inventory. Based on this classification, neighbourhood parks were selected and surveyed for this study. User demographic characteristics consisting of age, gender, marital status, education level and occupation were measured alongside

park utilisation activities. Neighbourhood parks were purposively sampled based on three criteria that included public ownership, designation for neighbourhood use and unrestricted public access. The units of analysis and observation were park users who were conveniently sampled. The selected sampling methods restricted the random selection of participants and will limit the generalisation of findings.

An observation schedule recording data on park user groups and activity typologies was developed. An interview schedule that included users' socio-demographic data, park utilisation statements assessed on a 7-point Likert scale and a table for listing activities park users engaged in was created. Observation and 416 interviews were conducted over 28 days from July to August 2024 on a randomly selected weekday and one weekend day, three times in a day—mid-morning, lunchtime and afternoon. The interview schedule was administered to male and female respondents, ensuring representation across 11 age groups, from children and adolescents, young adults, mature adults to the elderly.

After the data cleaning process, 404 interview

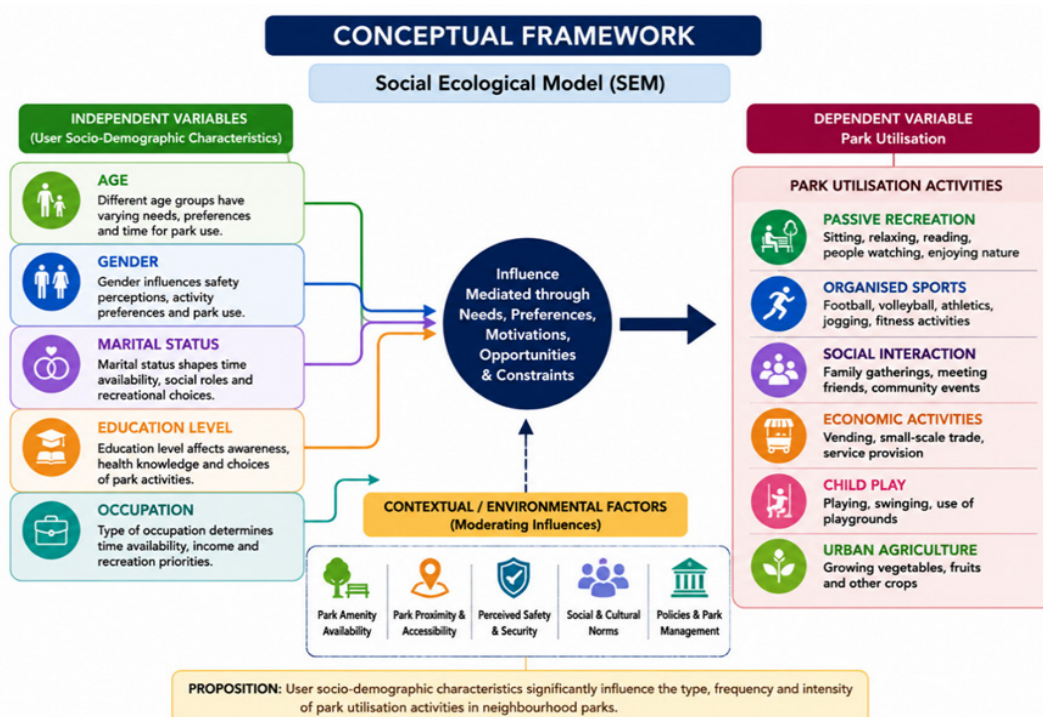


FIGURE 2

Conceptual framework of socio-demographic influences on park utilisation

Source: Author's conceptualisation based on Social Ecological Model 2026

schedules were analysed using IBM SPSS Statistics version 27. Descriptive statistics were employed to summarise user demographic characteristics and analyse park activities. Cross tabulation and Chi-Square tests were conducted to evaluate the relationship between user demographic characteristics and park utilisation. The results were assessed for significance at the .05 level.

Ethical Considerations

The study adhered to established ethical principles governing research involving human participants, including voluntary participation, informed consent, confidentiality, anonymity, and the right of respondents to withdraw from the study at any stage without penalty. Prior to participation, respondents were informed about the purpose of the study and their consent was obtained before interviews were conducted. No personally identifiable information was collected or disclosed, and all data were used solely for academic research purposes. Ethical approval for the study was obtained from Jomo Kenyatta University of Agriculture and Technology Institutional Scientific and Ethics Review Committee before commencement of data collection.

Study Area

This research was conducted in Nairobi, which has an administrative area of 696.1 square kilometres, is situated between longitudes 36°45' East and latitude 1°18' South and is 1,798 metres above sea level (Nairobi City County, 2023). With 17 sub-counties and 85 wards, Nairobi is home to 4,397,073 persons with a population density of 6,247 persons per square kilometre. There are 826

public open spaces in Nairobi totalling 3106.4 hectares (UN-Habitat, 2020). There are 15 parks and 19 gardens classified as either neighbourhood or city-level parks and gardens. Eight parks met the criteria for inclusion (**Table 1**).

RESULTS

Socio-Demographic Characteristics

Overall, there were more male (59.4%) than female (40.6%) park users (**Figure 3**). Rabai Road Garden recorded the highest proportion of male park users (9.2%), followed by Kibera Social Grounds (8.7%), while Westlands Botanical Garden and Kahawa West Community Park each recorded 7.7%. Kibera Social Grounds had the highest proportion of female park users (8.2%), followed by Kamukunji Historical Park (6.4%) and Jacaranda Grounds (6.2%). Nyayo Highrise Estate Linear Park recorded the fewest park users, both male (5.9%) and female (2.5%).

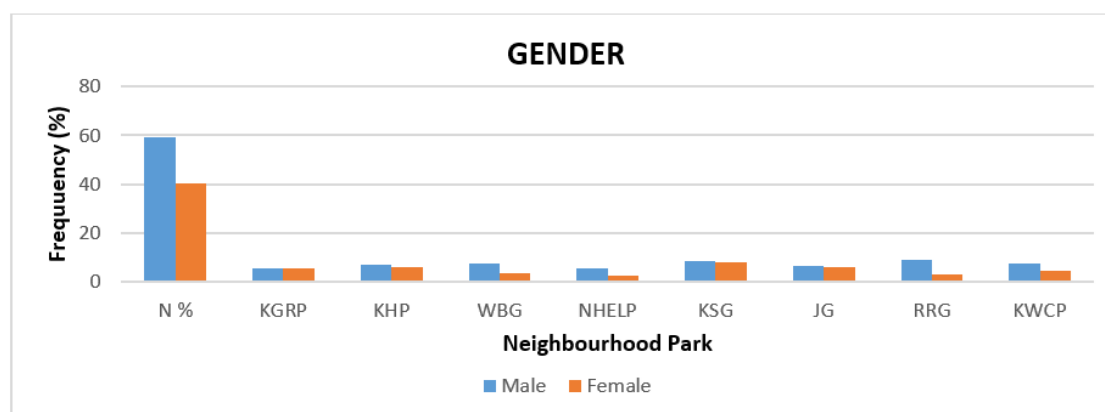
Young adults (20–34 years) accounted for 64.1% of all park users (**Figure 4**). Kibera Social Grounds recorded the highest proportion of young adults (10.6%), followed by Kamukunji Historical Park (9.6%) and Kahawa West Community Park (8.4%). Mature adults (35–59 years) represented 23% of park users, with the highest proportions recorded at Rabai Road Garden (5.1%) and Jacaranda Grounds (4.2%). Children (19 years and below) accounted for 11.4% of park users, with the highest proportion recorded at Kibera Social Grounds (3.7%) while those aged 60 years and above were the least represented, accounting for less than 1% across all parks.

TABLE 1

Neighbourhood parks studied in Nairobi City

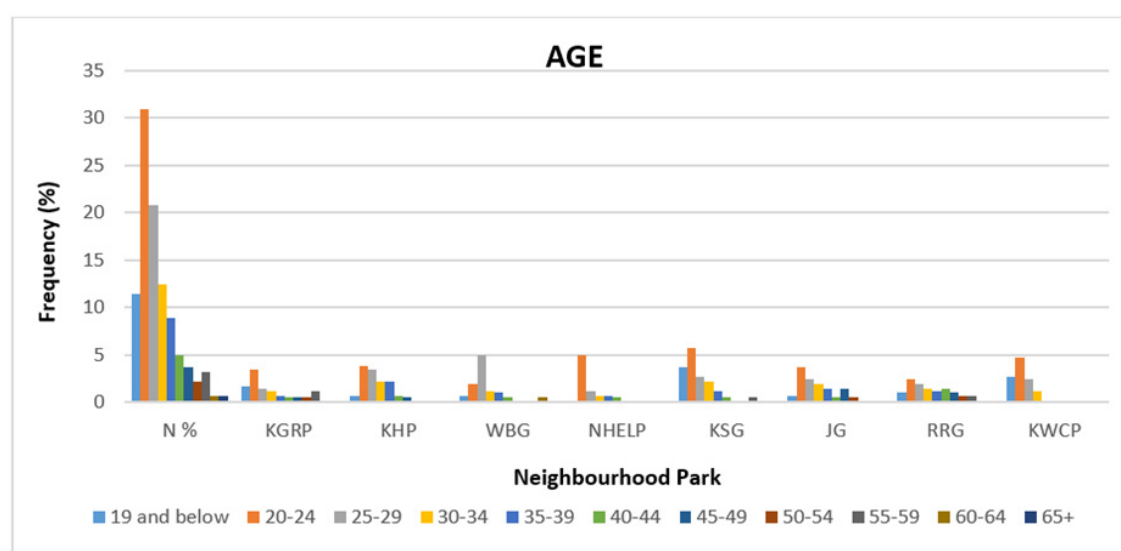
SN	Name	Typology	Neighbourhood	Area (acres)
1	Rabai Road Garden (RRG)	Garden	Buruburu	2.45
2	Kamukunji Historical Park (KHP)	Park	Kamukunji	7.27
3	Kibera Social Grounds (KSG)	Garden	Kibera	1.60
4	Kahawa West Community Park (KWCP)	Park	Kahawa West	4.47
5	Komb Green Riverfront Park (KGRP)	Garden	Korogocho	1.07
6	Westlands Botanical Garden (WBG)	Park	Westlands	10.21
7	Jacaranda Grounds (JG)	Park	Kayole/ Jacaranda	31.73
8	Nyayo Highrise Estate Linear Park (NHELP)	Park	Nyayo Highrise	1.63

Source: UN-Habitat (2020)

**FIGURE 3**

Gender of respondents

Source: Field survey, 2026

**FIGURE 4**

Age of respondents

Source: Field survey, 2026

Most park users were single (55.2%), followed by married (39.9%) and divorced individuals (2.7%) (**Figure 5**). In terms of education, 44.6% had attained secondary education, while 33% had tertiary education (**Figure 6**).

Most park users were self-employed (47.5%), followed by students (18.8%), unemployed individuals (17.6%), and employed individuals (15.3%) (**Figure 7**).

Park Utilisation

Park activities were categorised into 12 groups based on similar activities clustered together (**Table 2**).

The most frequently observed park activity was passive recreational stationary activities, involving 5,071 participants, with seating and sleeping being the most common activities (**Figure 8**). This was followed by passive recreational mobile activities, mainly walking. Active recreational mobile activities accounted for 2,654 occurrences. Child play was observed at Komb Green Riverfront Park, Kamukunji Historical Park, Nyayo Highrise Estate Linear Park, Kahawa West Community Park, Kibera Social Grounds, and Jacaranda Grounds (**Figure 9**). Jogging was observed at Kibera Social Grounds and Jacaranda Grounds, while cycling occurred at Kamukunji Historical Park, Kibera Social Grounds, and Jacaranda Grounds. Active

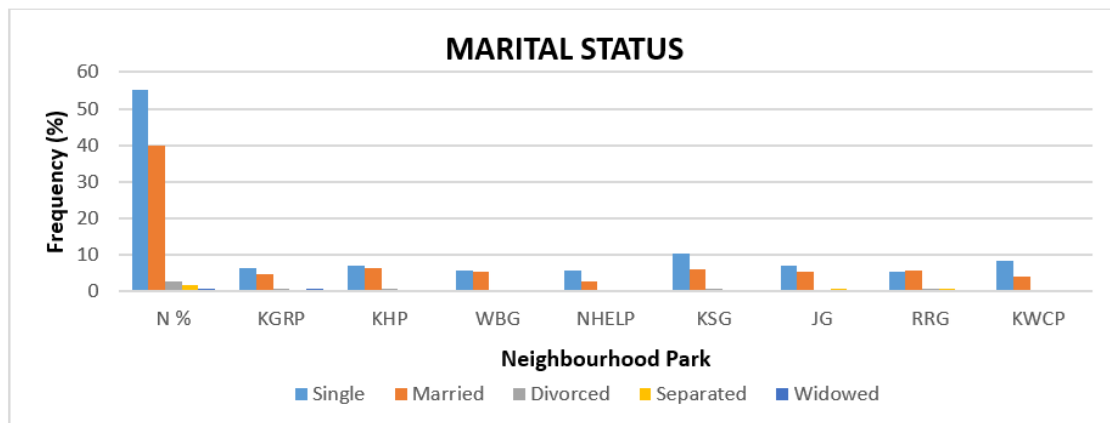


FIGURE 5
Marital status of respondents
Source: Field survey, 2026

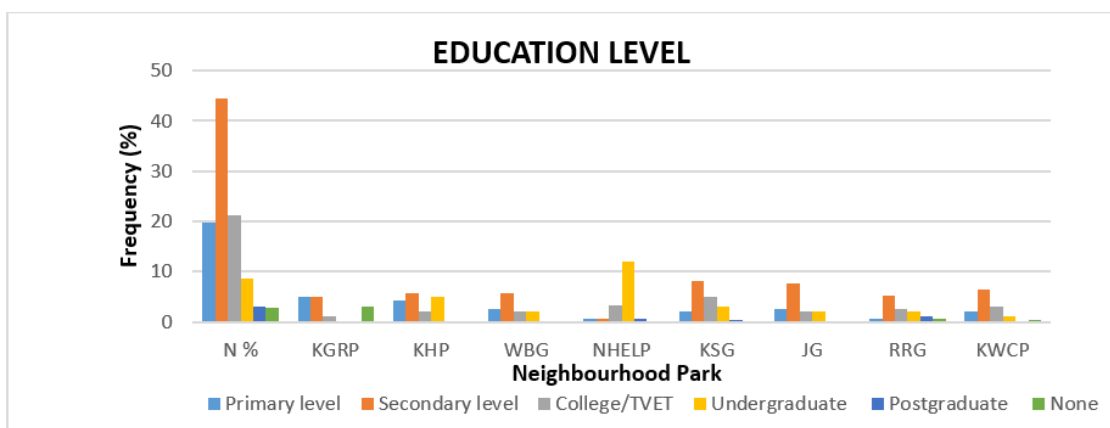


FIGURE 6
Education level of respondents
Source: Field survey, 2026

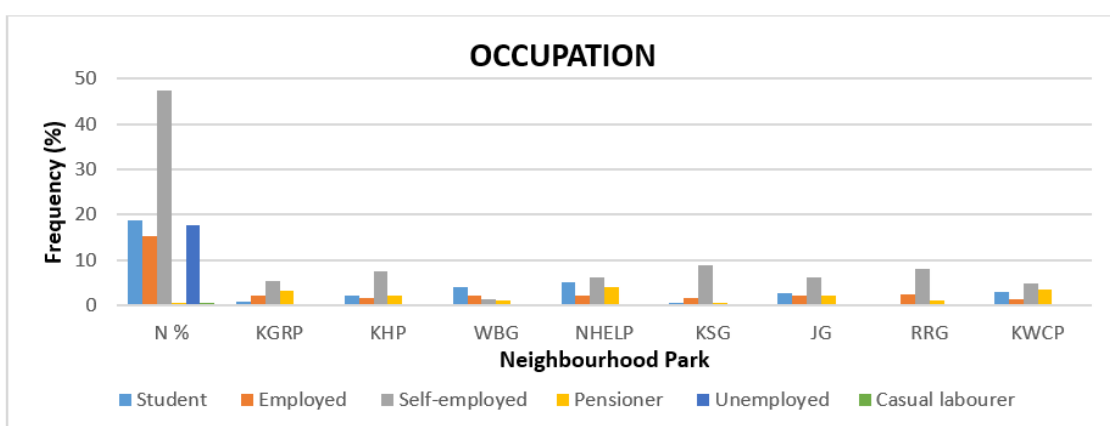


FIGURE 7
Occupation of respondents
Source: Field survey, 2026

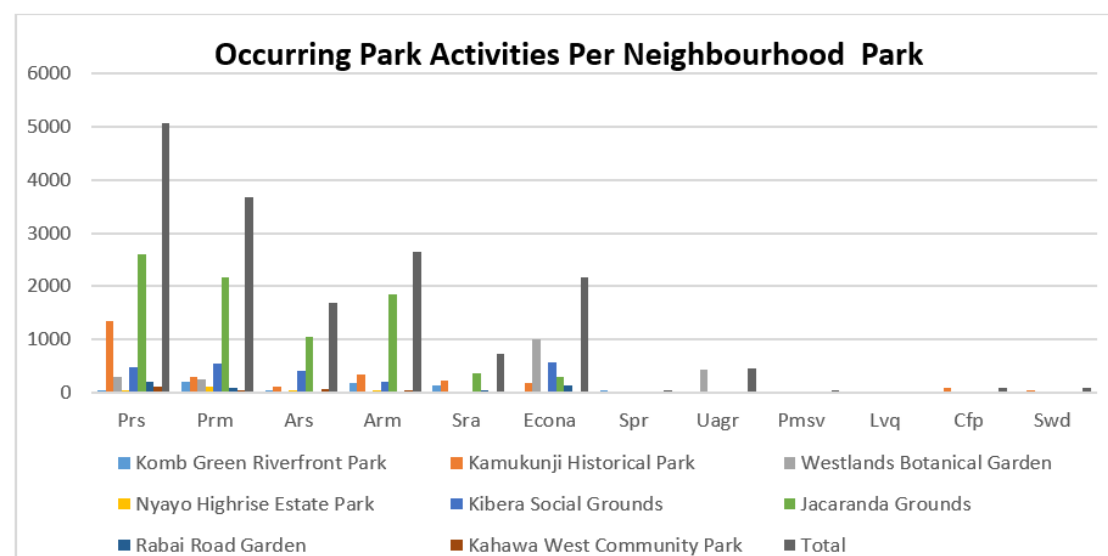
recreational stationary activities, comprising football, volleyball, tennis, handball, exercise, and acrobatics, recorded 1,676 occurrences (Figure 8). These organised sports were observed at Komb

Green Riverfront Park, Kamukunji Historical Park, Kibera Social Grounds, Jacaranda Grounds, and Kahawa West Community Park.

TABLE 2

Categorisation of park activities

SN	Activity Group	Activity Type	Abbreviation
1	Passive recreational stationary	Seating, sleeping, reading, smoking	Prs
2	Passive recreational mobile	Walking, sightseeing and bird watching	Prm
3	Active recreational stationary	Football, volleyball, tennis, acrobats, exercise	Ars
4	Active recreational mobile	Cycling, jogging, child play	Arm
5	Social recreational activities	Family outing, attending event or meeting	Sra
6	Economic activities	Hawking, shop, market stalls, car wash, washing used items for resale, selling plants or furniture	Econa
7	Spiritual activities	Preaching, praying, singing	Spr
8	Urban agriculture	Green house, vertical gardens, plant nursery	Uagr
9	Park maintenance & surveillance	Groundsmen, surveillance team members	Pmsv
10	Living quarters	Homeless	Lvq
11	Children feeding programme	Cooking and feeding spaces	Cfp
12	Solid waste dumping	Designated and undesignated dumping zones	Swd

Source: Field survey, 2026**FIGURE 8**

Occurring park activities per neighbourhood park

Source: Field survey, 2026

Economic activities accounted for 2,155 occurrences across all parks except Kahawa West Community Park. Westlands Botanical Garden recorded the highest number of economic activities (989 occurrences), followed by Kibera Social Grounds (570) and Jacaranda Grounds (298). Hawking and trading activities were observed from stalls, vehicles, and hand carts located along park edges and within park grounds (**Figure 10**).

Urban agriculture was observed across six parks, occupying a total area of 40,310 square metres. Activities included greenhouses, vertical gardens, planting beds, plant nurseries, woodlots, fruit trees, and poultry rearing (**Figure 11**).

Westlands Botanical Garden had 84.7% of its parkland area under urban agriculture, covering 35,000 square metres. This was followed by



FIGURE 9
Bouncing castle and trampoline at Kamukunji Historical Park
Source: Field survey, 2026



FIGURE 10
Sale of vegetables and general wares at Jacaranda Grounds
Source: Field survey, 2026



FIGURE 11
Greenhouse at Komb Green Riverfront Park
Source: Field survey, 2026

Kahawa West Community Park with 3,615 square metres (19.9%) and Komb Green Riverfront Park with 1,000 square metres (23.1%). Urban agriculture at Westlands Botanical Garden comprised predominantly plant nurseries (**Figure 12**), while Kahawa West Community Park had

arrowroots and banana stands planted along the riparian reserve of River Kiuu (**Figure 13**).

All studied parks, except Komb Green Riverfront Park, recorded instances of haphazard solid waste disposal (**Figure 14**). Nyayo Highrise Estate

**FIGURE 12**

Propagated plants ready for sale at Westlands Botanical Garden

Source: Field survey, 2026

**FIGURE 13**

Bananas and arrowroots on the riparian reserve of R. Kiuu at KWCP

Source: Field survey, 2026

**FIGURE 14**

Solid waste dumping at Nyayo Highrise Estate Linear Park

Source: Field survey, 2026

Linear Park and Rabai Road Garden had scattered waste along circulation paths and in secluded areas, while Kamukunji Historical Park and Kibera Social Grounds had waste piles located near open fields.

Designation of Park Activity Spaces

The modal score for the two park engagement statements (Pe2 and Pe3) was 6 on a 7-point Likert scale (**Table 3**). The mean scores for Pe2 and Pe3 were 4.74 and 4.63, respectively, while the corresponding median scores were 5.50 and 5.00. The standard deviations were 1.855 and 1.846, respectively.

Open fields at Kibera Social Grounds, Komb Green Riverfront Park, and Jacaranda Grounds hosted sports, political meetings, religious gatherings, child play equipment, bicycle riding, driving lessons, and physical education classes organised

by neighbourhood schools. No designated spaces for economic activities were observed in any park except Kamukunji Historical Park, where shops were collocated with the public toilet. Market stalls at Kibera Social Grounds and Rabai Road Garden were located along the park edges beside Kibera Drive and Kabarnet Close, and adjacent to Charles New Road and Rabai Road, respectively. Nyayo Highrise Estate Linear Park and Rabai Road Garden lacked designated activity spaces. At Kahawa West Community Park, abandoned buildings were observed to be occupied by various users and activities.

Relationship Between User Socio-Demographic Characteristics and Park Utilisation

The association between user socio-demographic characteristics and park utilisation was investigated using cross-tabulation and Chi-square tests. The results indicated that park utilisation varied

TABLE 3

Statements on designated and undesignated use of neighbourhood park spaces

Label	Park engagement Observation Statement	Mean	Median	Mode	Std. Deviation	Variance
Pe2	This neighbourhood park is used for its designated purpose	4.74	5.50	6	1.855	3.442
Pe3	Neighbourhood park activities occur in their designated spaces	4.64	5.00	6	1.846	3.40

Source: Field survey, 2026

significantly by gender ($\chi^2 = 79.60$, $df = 42$, $p < .001$), age group ($\chi^2 = 520.64$, $df = 420$, $p < .001$), education level ($\chi^2 = 274.60$, $df = 210$, $p = .020$), and occupation ($\chi^2 = 256.78$, $df = 210$, $p = .015$). Additionally, no significant association was found between park utilisation and marital status ($\chi^2 = 152.87$, $df = 168$, $p = .792$).

Gender

Cross-tabulation results showed that females predominantly engaged in selling at shops and market stalls (100%), preaching (100%), child play (88.9%), seating (74.7%), washing used items for resale (71.4%), hawking (68.4%), and child feeding programmes (66.7%). Males predominantly engaged in car washing, smoking, reading, grazing animals, mechanics, playing board games, and photography (100%), floriculture (88.9%), urban agriculture (85.7%), selling furniture (80%), sleeping (75%), sports (71.4%), and park maintenance (69.2%).

Age

Park users aged 20–24 years were the most actively engaged in park activities, including sports (57.1%), smoking and bird watching (50%), park maintenance (46.2%), washing items for resale (42.9%), selling at market stalls and furniture (40%), walking (35%), religious activities, child feeding programmes and shop selling (33.3%), and urban agriculture (28.6%). The 25–29-year age group engaged in animal grazing and car washing (100%), floriculture (66.7%), sleeping (50%), supervising child play (44.4%), selling furniture and attending meetings or events (40%), auto mechanics and child feeding programmes (33.3%), hawking (21.1%), selling at market stalls (20%), seating (17.6%), smoking (16.7%), park maintenance (15.4%), and urban agriculture (14.3%). Children (19 years and below) participated in reading (100%), painting (33.3%),

football (30.9%), selling at market stalls (20%), smoking (16.7%), sports and urban agriculture (14.3%). Users aged 60–65 years engaged in selling plants (33.3%), park surveillance (33.3%), selling furniture (20%), and walking (5%).

Education Level

The majority of park users had secondary education and engaged in activities such as car washing, board games, and reading (100%), selling at shops (83.3%) and market stalls (80%), child play (77.8%), sports (71.4%), park surveillance (66.7%), attending meetings and selling furniture (60%), urban agriculture (57.1%), walking (55%), and community sensitisation. University graduates predominantly engaged in youth training (100%), community sensitisation and picnicking (50%), and sports (28.6%). Those with primary education participated in attending events and grazing animals (100%), washing items for resale (57.1%), hawking wares (42.1%), seating (35.3%), child feeding programmes and mechanics (33.3%), and sleeping (25%).

Occupation

The self-employed predominantly patronised the parks, engaging in car washing and attending events (100%), selling plants (94.1%), mechanics (83.3%), hawking (78.9%), washing items for resale (71.4%), attending meetings (70%), child play, religious activities, park surveillance, and smoking (66.7%), and selling furniture and at market stalls (60%). Students were involved in religious activities (33.3%), walking (30%), sports (28.6%), floriculture (22.2%), selling at market stalls (20%), smoking (16.7%), and seating (11.8%). Employed individuals engaged in selling furniture (40%), park maintenance (38.5%), and park surveillance and child feeding programmes (33.3%).

DISCUSSION

This study revealed that socio-demographic characteristics of neighbourhood residents and the availability of open space influenced park utilisation, corroborating findings by Azagew and Worku (2020), Ma et al. (2022), and Jane et al. (2025). Parks located in informal settlements such as Korogocho, Kibera, Kayole, and low-income areas of Kamukunji recorded high user densities, reflecting the limited provision of public open spaces in these neighbourhoods. Open fields particularly exhibited multifunctional roles, supporting recreation, socialisation, education, economic activities, religious gatherings, and community events.

Similar to other African studies, more males than females utilised neighbourhood parks (Azagew & Worku, 2020; Kiplagat et al., 2022; Odhengo et al., 2024), a finding that contrasts with studies from developed countries where gender differences in park visitation are minimal (Fontán-Vela et al., 2021; Veitch et al., 2021). The higher male park utilisation may be associated with greater leisure time, fewer domestic responsibilities, and park designs that prioritise high-intensity physical activities such as sports. Additionally, personal safety concerns appear to influence female park engagement more than male park engagement. In developed countries, greater gender parity and shared domestic responsibilities may contribute to more equal park access and utilisation.

This study further supports findings by Braçe et al. (2021) that females often visit parks for relaxation, landscape enjoyment, and social interaction, frequently accompanying children to play. Female users were more prevalent in parks with child-friendly amenities such as Komb Green Riverfront Park, Kamukunji Historical Park, Kibera Social Grounds, and Jacaranda Grounds. Consistent with Cohen et al. (2021), females avoided parks perceived as insecure, including Nyayo Highrise Estate Linear Park and Kahawa West Community Park. The absence of designated activity spaces at some parks and the occupation of abandoned buildings by undesirable activities further reinforced perceptions of insecurity. Interestingly, more females engaged in informal economic activities such as hawking and vending, possibly because these activities offer flexibility and enable the balancing of domestic and income-generating

responsibilities.

Consistent with other Kenyan studies, younger age groups dominated park patronage, with user numbers declining with increasing age (Kiplagat et al., 2022; Odhengo et al., 2024). This contrasts with findings by Cui et al. (2024), Ma et al. (2022), and Zhan et al. (2021), who reported higher utilisation among older adults due to greater availability of leisure time. Children observed playing on neighbourhood streets at Nyayo Highrise Estate Linear Park and by the roadside at Kahawa West Community Park indicate inadequacies in designated child play facilities and potential safety concerns. The low representation of elderly users may be attributed to park accessibility challenges, inadequate age-friendly amenities, poor connectivity between parks and surrounding neighbourhoods, and limited social support to facilitate park visitation.

Supporting findings by Kiplagat et al. (2022) and Azagew and Worku (2020), this study recorded higher numbers of single, divorced, and separated park users than married users. These groups frequently utilised parks for socialisation, recreation, health, and economic activities, while married users tended to engage in family-oriented activities. The self-employed, particularly traders operating at Kibera Social Grounds, Kamukunji Historical Park, Westlands Botanical Garden, and Jacaranda Grounds, utilised parks as spaces for vending goods and services to other users. The lower representation of employed individuals may reflect limited leisure time resulting from work commitments.

This study further confirmed that age, gender, education level, and occupation significantly influenced park utilisation, while marital status did not. These findings support those of Azagew and Worku (2020) and Odhengo et al. (2024), but differ from Kiplagat et al. (2022), who found marital status to be significant and gender not to be significant. The insignificant relationship between marital status and park utilisation may reflect shared motivations across all marital groups, including physical activity, social interaction, relaxation, and interaction with nature. While single individuals may have more leisure time, married users often visit parks with family members, resulting in comparable utilisation patterns. These findings support the

Social Ecological Model by demonstrating that individual socio-demographic characteristics significantly influence park use (Jane et al., 2025; Lee et al., 2021). The results therefore underscore the importance of promoting equitable access, inclusivity, gender-sensitive design, and personal safety within neighbourhood parks.

Cross-tabulation results highlight the importance of neighbourhood parks accommodating commercial activities, organised sports, child play, urban agriculture, seating, and resting spaces. The widespread presence of economic activities across most parks demonstrates the role of neighbourhood parks as spaces for livelihood generation and local economic development. The high occurrence of economic activities at Westlands Botanical Garden may be attributed to the extensive plant nurseries and related trading activities observed within the park. Similarly, the presence of plant nurseries, greenhouses, planting beds, and urban agriculture initiatives indicates that neighbourhood parks contribute not only to recreation but also to food security and income generation.

The need for sports facilities and child play spaces across all user groups reinforces the importance of neighbourhood parks in promoting physical activity and public health. Children require safe and dedicated play and reading spaces, while elderly users benefit from accessible walking paths and seating facilities. Park maintenance and surveillance activities observed among adults, employed individuals, and older users suggest that cleanliness, orderliness, and safety are important pull factors influencing park visitation. Large tree canopies and lawns promoted seating and sleeping activities, while agri-based amenities encouraged urban agriculture. Conversely, solid waste accumulation, overgrown vegetation, poorly defined pathways, lack of designated activity spaces, and the presence of individuals perceived as threatening discouraged park use. Well-designed parks such as Komb Green Riverfront Park were perceived as safe and attractive community spaces, supporting their sustained utilisation.

This study deliberately selected neighbourhood parks based on predefined criteria rather than random selection. In addition, participants were selected based on accessibility, which may have limited representation of the broader Nairobi

population. These limitations restrict statistical generalisation of the findings. Nevertheless, the chosen methods facilitated in-depth investigation and context-specific understanding of neighbourhood park utilisation. Furthermore, the intensity of park-space use was not measured because geo-referencing of park users was not undertaken during data collection.

CONCLUSION

This paper assessed the relationship between users' socio-demographic characteristics and the utilisation of neighbourhood parks in Nairobi. The study concludes that neighbourhood parks provide not only health, recreational, and socialisation benefits but also economic and food security benefits. The findings contribute to existing knowledge by identifying the socio-demographic characteristics that predict neighbourhood park utilisation in Nairobi. The study further demonstrates that multiplicity of park-space use is particularly important in low-income neighbourhoods where public open space is limited. Age, gender, education level, and occupation were found to significantly influence park utilisation, underscoring the need for planners and policymakers to consider socio-demographic differences when designing, managing, and maintaining neighbourhood parks. Addressing these disparities will enhance inclusivity, improve user experience, and promote sustained utilisation of neighbourhood parks.

RECOMMENDATIONS

Gender-Inclusive Park Design

Neighbourhood park planning should incorporate gender-responsive design principles. Permanent and mobile sale points should be located adjacent to child play areas to enable female traders to undertake vending activities while supervising their children. Such arrangements will improve female participation and enhance the economic utility of parks.

Safety, Maintenance and Surveillance

Consistent park maintenance, surveillance, waste management, and improved lighting should be prioritised to enhance park legibility and perceived safety. These interventions are particularly important in attracting and retaining female users and other vulnerable groups. Abandoned

structures should be rehabilitated or repurposed to prevent undesirable activities and improve park security.

Age-Responsive Recreational Facilities

To address declining park utilisation with increasing age, neighbourhood parks should provide amenities supporting low-, medium-, and high-intensity physical activities. Longer pedestrian walkways, accessible paths, benches, shaded resting areas, and open lawns should be incorporated to encourage greater use by elderly users while accommodating other age groups.

Multi-Functional Park Spaces

Given the diversity of park users, neighbourhood parks should provide a range of solo and group activity spaces, supported by different types of seating arrangements and recreational amenities. Open fields should be designed as multi-use spaces capable of accommodating organised sports, meetings, community events, and mobile play equipment. Such flexibility will maximise utilisation and support social interaction.

Integration of Urban Agriculture

Planting beds, plant nurseries, greenhouses, vertical gardens, and other agri-based amenities should be incorporated within neighbourhood parks. These facilities can enhance food security, promote environmental education, and generate income through the sale of plants and agricultural produce.

Support for Local Economic Activities

The widespread occurrence of vending and trading activities demonstrates the importance of neighbourhood parks as spaces for livelihood generation. Appropriate spaces for small-scale commercial activities should therefore be integrated into park design without compromising recreational functions. This will strengthen local economies while enhancing park attractiveness and utilisation.

Improved Spatial Organisation

Clearly designated activity spaces should be provided for recreation, commerce, child play, sports, social gatherings, and urban agriculture. Well-defined pathways, activity zones, and signage will improve park functionality, reduce conflicts between activities, and enhance user experience.

Future Research

Further studies should be undertaken in other geographic jurisdictions to allow comparative analysis and strengthen the generalisability of findings. Future research should also incorporate geo-referencing techniques and spatial analysis to assess intensity of park use and provide more detailed evidence for policy and design interventions.

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